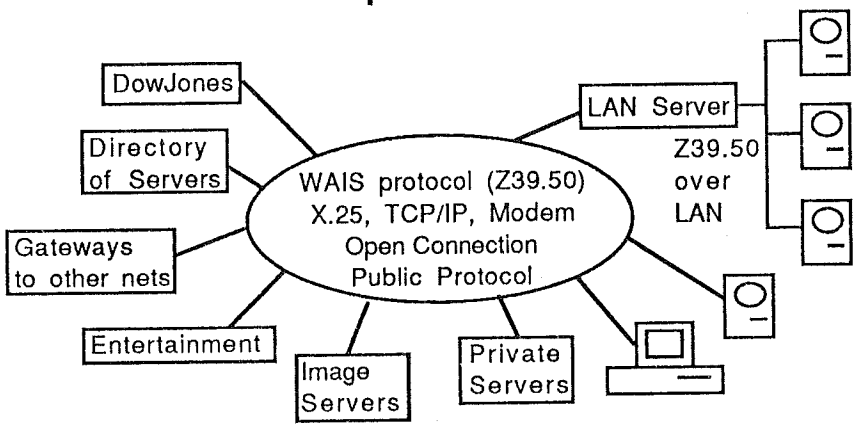
Wide Area Information Servers

Brewster Kahle

April 1991



Users Needs:
- Selecting Servers
- Answering Questions
- Organizing Responses

Architecture Issues:
- Scalability
- Security
- Business model for servers
- Reliable Access

The Wide Area Information Servers system is a set of products supplied by different vendors to help end-users find and retrieve information over networks. Thinking Machines, Apple Computer, and Dow Jones have implemented such a system for use by business executives. These products are becoming more widely available from various companies.

What does it do? Users on different platforms can access personal, company, and published information from one interface. The information can be anything: text, pictures, voice, or formatted documents. Since a single computer-to-computer protocol is used, information can be stored anywhere on different types of machines. Anyone can use this system since it uses natural language questions to find relevant documents. Relevent documents can be fed back to a server to refine the search. This avoids complicated query languages and vendor specific systems. Successful searches can be automatically run to alert the user when new information becomes available.

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How does it work? The servers take a users question and do their best to find relevant documents. The servers, at this point, do not "understand" the users english language question, rather they try to find documents that contain those words and phrases and ranks then based on heuristics. The user interfaces (clients) talk to the servers using an extension to a standard protocol Z39.50. Using a public standard allows vendors to compete with each other, while bypassing the usual proprietary protocol period that slows development. Thinking Machines is giving away an implementation of this standard to help vendors develop clients and servers.

What servers exist? Even though the system is very new, there are already several servers. Dow Jones is putting a server on their own DowVision network. This server contains the Wall Street Journal, Barons, and 450 magazines. This is a for-pay server. Thinking Machines operates a Connection Machine on the internet for free use. The databases it supports are some patents, a collection of molecular biology abstracts, a cookbook, and the CIA World Factbook. MIT will support a poetry server with a great deal of classical and modern poetry. Cosmic is serving descriptions of government software packages. The Library of Congress has plans to make their catalog available on the protocol. Weather maps and forecasts are made available by Thinking Machines as a repackaging of existing information. The "directory of servers" facility is operated by Thinking Machines so that new servers can be easily registered as either for-pay or for-free servers and users can find out about these services.

How can I find out more? Contact Brewster Kahle for more information on the WAIS project, the Connection Machine WAIS system, or the free Mac, Unix Server, and X windows system interfaces.

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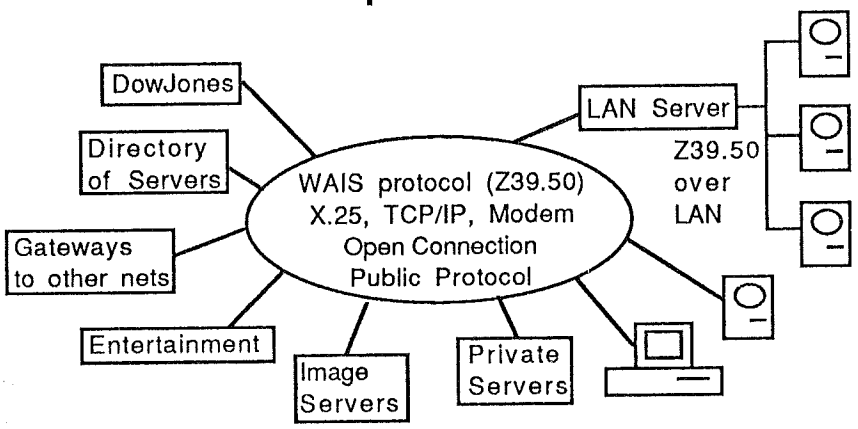

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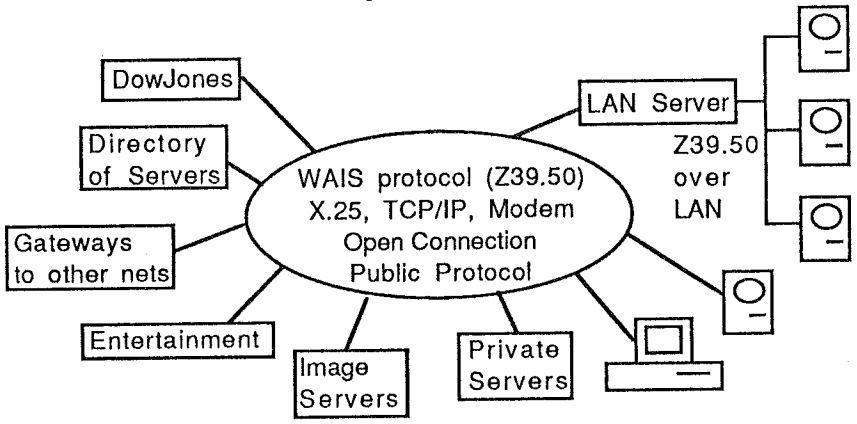

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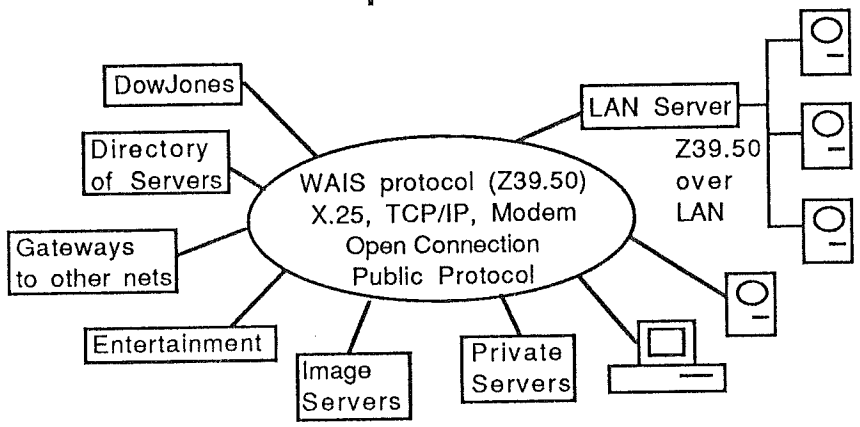

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